Rudders, Propellers, and Tailshafts:

☐ Rudder(s) MSM Ch. 8.E

- Number of rudders _____
- Pintles
- Gudgeons
- Skeg
- Stock
- Intermediate stock
- Steadiment bearings
- Carrier
- Rudder trunk
- Plating
- Fastenings
- Palm and palm bolts
- Fairwater
- Bushings
- Air or hydrostatic test
- Rudder bearing clearances

☐ Propeller(s) 46 CFR 58.03-1

- Locknuts
- Cap
- Rope guard
- Propeller fitted to shaft

Date Drawn	Number of Blades	Material

Notes: _____

_____

_____

_____

_____

_____

☐ Tailshaft(s) MSM Ch. 8.D

- Stern tube and gland
- Key and keyway
- Retaining rings
- Shaft sleeve or liner
- Struts and strut bearings
- Tapered shaft
- Flanged shaft
- Evaluation of oil reservoir for oil lubricated bearings
- Bushing and gearing clearances within manufacturer's limits

Date Drawn	Size	Type of Stern Tube Bushings or Bearings	Weardown

☐ Bow thruster MSM Ch. 8.D.2.c

☐ Stern thruster MSM Ch. 8.D.2.c

Valves and Through-Hull Fittings:

NOTE: *Guidance on valves and through-hull fittings can be found in MSM Volume II, Chapter 8.F.*

☐ Sea chests, spool pieces, through-hull fittings 46 CFR 56.50-95

- Strainers removed
- Welds
- Baffles
- Strainer fastenings
- Fastenings
- Branch connections

Notes: _____

_____

_____

_____

_____

_____

☐ Fastenings — MSM Vol. IV Ch. 6.H, NVIC 3-68

- Rivets
- Welding
- Nails, screws, bolts

☐ Cargo tank internal examination — 46 CFR 31.10-21, 46 CFR 91.40-3, MSM Ch. 8.B.4, MSM Ch. 8.B.6

- Cargo tanks entered

_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Overall Condition of Coatings:

Poor	Good

N/A

Watertight Integrity:

NOTE: *Guidance on watertight and weathertight inspections can be found in MSM Volume II, Chapter 6.F.5.*

☐ Cargo hatches — MSM Vol. IV Ch. 6.I.5

- Dogs or other securing appliances
- Covers
- Gaskets
- Coamings

☐ Airports below weatherdecks — MSM Vol. IV Ch. 6.I.4

- Dogs or other securing appliances
- Rims or seats
- Glass
- Dead covers
- Hinges and lugs

Notes: _____

_____

_____

_____

_____

_____

Section 3: Underwater Survey

NOTE: *Guidance for conducting underwater surveys in lieu of alternate drydock examinations is detailed in MSM Volume II, Chapter 8.C and NVIC 1-89.*

Underwater Survey Program:

☐ Date of Pre-Survey Drydocking

☐ Vessel over 15 years old

☐ Hull marking system used — G-MOC policy ltr. 3-98

- Weld bead grid
- Contrasting color coating
- Movable grid with acoustic "pinger"
- Other _____

☐ Reference video available

Review of Application for Underwater Survey:

☐ Submitted 90 days before survey date

☐ Identify diving contractor

- Number of divers
- Type of diving equipment
- NDT and repair capabilities

☐ Copy of diving operations manual

- Means of waterborne diver support

☐ Means of taking rudder bearing clearances

☐ Sea chest blanks

☐ Letter from master / chief engineer / person-in-charge

Notes: _____

_____

_____

_____

_____

_____

☐ Vessel carefully examined for fractures and previous fracture repairs

MSM Ch. 8.B.6.a
NVIC 15-91, Change 1

☐ Fastenings

MSM Vol. IV Ch. 6.H
NVIC 3-68

- Rivets
- Welding
- Nails, screws, bolts

☐ Cargo holds entered

_____ _____ _____
_____ _____ _____
_____ _____ _____
_____ _____ _____

☐ Integral fuel oil tank internal examination

46 CFR 31.10-24
46 CFR 71.53
46 CFR 91.43
MSM Ch. 8.B.5

- Fuel tanks entered

_____ _____ _____
_____ _____ _____
_____ _____ _____
_____ _____ _____

Overall Condition of Coatings:

Poor	Good

N/A

Notes: _____
_____
_____
_____
_____
_____

Special Criteria for Passenger Vessels:

NOTE: *Passenger vessels may request drydock extensions up to 30 months in some cases, which will require an underwater examination of the hull. Guidance for this process is found in G-MOC policy letter 3-98.*

WARNING: *ALL passengers must be removed from vessel prior to removal of sea valves.*

☐ Hull Maintenance and Condition Assessment Program

- Preventative maintenance plan
- Annual hull condition assessment

☐ Site selection

- Sufficient water depth
- Underwater hazards
- "Clear box"

☐ Preliminary examination

- Third party
- Divers

☐ Underwater hull exam

- Third party supervised
- Ultrasonic gaugings

Notes: _____
_____
_____
_____
_____
_____

Section 2: Drydock Inspection Items

External Structural Integrity:

NOTE: *Request records of Outstanding Conditions of Class. (Form or format may vary depending on classification society.) Conditions of Class may identify structural defects, wastage, etc.*

☐ Vessel plans available

46 CFR 31.10-22
46 CFR 71.50-5
46 CFR 91.40-5

☐ External structural members

46 CFR 71.50-3
46 CFR 91.40-3
NVIC 7-68

- Plating
- Planking
- Caulking
- Reinforcing straps
- Stem
- Sternpost
- Bilge keels
- Keel
- Welds
- Pitting
- Signs of electrolysis

Overall Steel Wastage:

Poor	Good

Areas of particular interest:_____

_____

_____

_____

_____

_____

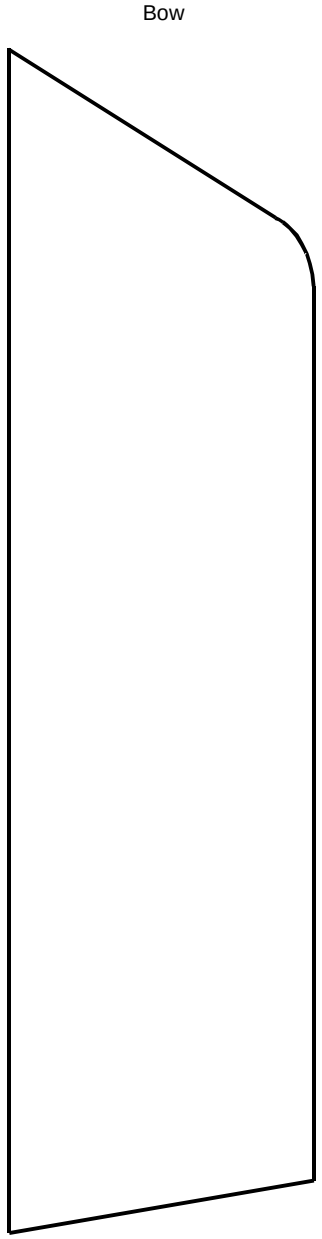
_____

_____

_____

_____

_____



Involved Parties & General Information:

Vessel's Representatives
Phone Numbers

Owner—Listed on DOC (if applicable), or COFR
No Change

Operator
No Change

Deficiency Summary Worksheet:

Name of Vessel **VIN**

Deficiency	MSIS Code	Req't. Issued / Date Completed

Table of Contents:

Notes:

Total Time Spent Per Activity:

Regular Personnel (Active Duty)			
ACTIVITY TYPE	ACTIVITY	TRAINING	(PERS) MI

TOTAL ADMIN HOURS	TOTAL TRAVEL HOURS

Reserve Personnel			
ACTIVITY TYPE	ACTIVITY	TRAINING	(PERS) MI

TOTAL ADMIN HOURS	TOTAL TRAVEL HOURS

Auxiliary Resources	
TOTAL BOAT HOURS	TOTAL AIRCRAFT HOURS

Conversions:

Distance and Energy

Kilowatts (kW)	X	1.341	=	Horsepower (hp)
Feet (ft)	X	3.281	=	Meters (m)
Long Ton (LT)	X	.98421	=	Metric Ton (t)

Liquid *(**NOTE:** Values are approximate.)*

Liquid	bbl/LT	m^3/t	bbl/m^3	bbl/t
Freshwater	6.40	1.00	6.29	6.29
Saltwater	6.24	.975	6.13	5.98
Heavy Oil	6.77	1.06	6.66	7.06
DFM	6.60	1.19	7.48	8.91
Lube Oil	7.66	1.20	7.54	9.05

Weight

1 Long Ton	=	2240 lbs	1 Metric Ton	=	2204 lbs
1 Short Ton	=	2000 lbs	1 Cubic Foot	=	7.48 gal
1 Barrel (oil)	=	5.61 ft = 42 gal = 6.29 m^3	1 psi	=	.06895 Bar = 2.3106 ft of water

Temperature: Fahrenheit = Celsius (°F = 9/5 °C + 32 and °C = 5/9 (°F – 32))

0	=	-17.8	80	=	26.7	200	=	93.3
32	=	0	90	=	32.2	250	=	121.1
40	=	4.4	100	=	37.8	300	=	148.9
50	=	10.0	110	=	43.3	400	=	204.4
60	=	15.6	120	=	48.9	500	=	260
70	=	21.1	150	=	65.6	1000	=	537.8

Pressure: Bars = Pounds per square inch

1 Bar	=	14.5 psi	5 Bars	=	72.5 psi	9 Bars	=	130.5 psi
2 bars	=	29.0 psi	6 Bars	=	87.0 psi	10 Bars	=	145.0 psi
3 Bars	=	43.5 psi	7 Bars	=	101.5 psi			
4 Bars	=	58.0 psi	8 Bars	=	116.0 psi			